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EXAMINER

YAO, SAMCHUAN CUA

ART UNIT PAPER NUMBER

1733

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/017,681

Applicant(s)

KO ET AL.

Examiner

Sam Chuan C. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11, 12 and 14-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 11, 12 and 14-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 11-12, and 14-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Itoh et al (US 4,892,754) in view of Trokhan et al (US 5,547,747) and Anderson et al (US 6,103,061).

With respect to claims 1, 7-8, 11-12, 14-15 and 24, Itoh et al teaches a process for making an absorbent web, the process comprises:

- a) providing a 1st super-absorbent polymer precursor composition including a monomer (col. 4 line 55 to col. 5 line 43);
- b) providing a 2nd super-absorbent polymer precursor composition including a water soluble radical polymerization initiator (col. 5 lines 44-51);
- c) providing a prefabricated fibrous web including natural cellulosic fibers and/or (polyester fibers or other thermoplastic fibers) (col. 5 line 64 to col. 6 line 5);
- d) separately and sequentially (i.e. two different stages) applying the 1st and 2nd super-absorbent polymer precursor compositions to the fibrous web, wherein the precursor compositions come into contact with each other (col. 6 lines 49-59; col. 6 lines 33-46; example 2); and,

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e) chemically reacting the 1st and 2nd super-absorbent polymer precursor

compositions in or on the fibrous web (col. 7 lines 7-29).

In light of the following passage (for example), "... a [1st] method wherein a radical polymerization initiator is applied uniformly in the form of a separate solution from the aqueous monomer to the fibrous substrate, to which the aqueous monomer has previously been applied, by spraying or the like and is decomposed on the fibrous substrate **and** a [2nd] method wherein a radical polymerization initiator is applied uniformly in the form of a separate solution from the aqueous monomer to the fibrous substrate, and then the aqueous monomer is uniformly applied thereto, by spraying, coating or the like" (bold face, emphasis and words added; col. 6 lines 49-59); and, in view that, Itoh et al also teaches "the aqueous monomer is uniformly applied thereto, by spraying" (emphasis added; col. 6 lines 57-59) in the 2nd method, and further teaches applying a 2nd superabsorbent precursor composition in a form of a mist (column 8 lines 41-46), it is taken that, the teachings of Itoh et al envisions sequentially spraying 1st and 2nd superabsorbent precursor compositions to a preformed fibrous web. In any event, it would have been obvious in the art to use a spraying method in a sequential application of 1st and 2nd superabsorbent precursor compositions to a preformed fibrous web, because: a) there are only three conventional methods (impregnating, spraying, and coating) for applying these compositions suggested by Itoh et al (col. 6 lines 9-59); b) it is conventional in the art to impregnate or coat a fibrous substrate with a polymeric composition by spraying; and, c) Ito et al

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also teaches sequentially applying a 1st superabsorbent precursor composition and a 2nd superabsorbent precursor composition to a fibrous substrate wherein the 2nd superabsorbent precursor composition is in form of a mist (col. 8 lines 41-46). For these reasons, the application of 1st and 2nd superabsorbent precursor compositions using a non-contact application process is either anticipated by or obvious over the teachings of Itoh et al does not teach using a non-contact printing process for adding a 1st superabsorbent polymer precursor composition to a fibrous web. However, since: a) Trokhan et al teaches the difficulty of spraying a superabsorbent material to a fiber web in a precise pattern and suggest using a printing method to precisely apply a superabsorbent material to a fiber web (col. 1 line 21 to col. 2 line 23); and b) it is a common knowledge in the art to apply a coating/impregnating liquid composition to an absorbent fibrous web using patterned spraying systems such as a ink jet-printing technique or a spray-printing technique as exemplified in the teachings of either Wisneski et al (col. 11 lines 5-15) or Anderson et al (col. 1 lines 7-11; col. 12 line 66 to col. 13 line 38), it would have been obvious in the art to add a 1st superabsorbent polymer precursor composition to a fibrous web using a patterned spraying system such as an ink jet-printing technique. For the same reason as a 1st superabsorbent polymer precursor composition application (not presently recited in claims 1 and 15), it would have been obvious in the art to add a 2nd superabsorbent polymer precursor composition to a fibrous web using a patterned spraying system such as an ink jet-printing technique.

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As for the recited characteristics (i.e. *"a superabsorbent polymer consisting essentially of particles which stick to fiber surface and are spaced apart by an average distance of 50-4000 microns"*) of a resultant absorbent web, in light of the similarity of the production processes (i.e. using a jet ink printing technique to apply superabsorbent polymer precursor compositions), the recited characteristics are taken to naturally flow from a process taught by Itoh et al, where a ink jet printing technique is used to add 1st and 2nd superabsorbent polymer precursor compositions. In any event, such would have been obvious in the art, since it is conventional in the art to apply superabsorbent particles to a fiber web such that, the particles stick to fibers in the web and are substantially spaced apart from one another and since one in the art would have determined, by routine experimentation, an optimal SAP concentration being applied to a fiber web for a desired end-use of a resultant absorbent article. Average distance between SAP clearly also depends on an amount of SAP which is applied to a fiber web for a given surface area of the fiber web. Note that, Itoh et al teaches preferably ranges from 10-1000 parts by weight of monomers per 100 part by weight of a fibrous substrate (col. 7 lines 59-67). For a relatively low amount of monomers which are applied to a fibrous substrate, SAP is reasonably expected to be spaced apart from each other at an average distance which falls around the recited average distance range recited in the independent claims.

Note: Where ... the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.

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Whether the rejection is based on "inherency" under 35 USC § 102, on prima facie obviousness" under 35 USC § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products." In re Best, 562 F2d 1252, 1255, 195 USPQ 430, 433-4 (CCPA 1977).

With respect to claims 2-3, sprayed mists generally have a diameter range that fall within or overlap with the range recited in these claims.

With respect to claims 4-6, the recited viscosity range is conventional in the art. One in the art would have determined, by routine experimentation, a workable viscosity range in order to effectively impregnate a fiber web with superabsorbent compositions. It is worth noting that, Anderson et al teaches using a "*viscosity modifier ... if the viscosity of the printing composition is not suitable for the method of printing desired.*" (col. 14 lines 15-22).

With respect to claim 16, the recited compositions of a non-woven web in these claims read on using 100% by weight absorbent fibers such as wood pulp, cotton, etc. (col. 5 lines 64-68).

With respect to claim 17, since the recited composition range in a pre-formed non-woven web is conventional/notoriously well known in the art, this claim would have been obvious in the art.

With respect to claims 18-19, it is conventional/notoriously well known in the art to form thermoplastic fibers by either melt-blowing or spun-bonding process.

With respect to claim 20, see column 4 line 56 to column 5 line 21.

With respect to claims 21-23, the recited amount of SAP in these claims is conventional in the art.

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With respect to claim 25, see column 7 lines 26-36.

With respect to claims 26-27, see column 4 line 56 to column 5 line 21.

Response to Arguments

3. Applicant's arguments filed 05-17-04 have been fully considered but they are not persuasive.

On pages 9-11, Counsel argues that Itoh et al does not teach using a non-contact printing process to apply a superabsorbent polymer precursor composition to an absorbent fiber web. Moreover, Counsel suggested the advantages of using a non-contact printing technique over conventional methods such as impregnating, spraying, and coating for applying compositions suggested by Itoh et al. Examiner agrees with Counsel that Itoh et al does not teach using a non-contact printing process to apply a superabsorbent polymer precursor composition to an absorbent fiber web. However, the rejection of pending claims is not based solely on the Itoh et al patent. The collective teachings of applied references would have suggested to one in the art to apply to apply a superabsorbent polymer precursor compositions to an absorbent fiber web in a process taught by Itoh et al, because (as noted above): a) Trokhan et al teaches the difficulty of spraying a superabsorbent material to a fiber web in a precise pattern and suggest using a printing method to precisely apply a superabsorbent material to a fiber web (col. 1 line 21 to col. 2 line 23); and b) it is a common knowledge in the art to apply a coating/impregnating liquid composition at a "*preselected pattern*" to an absorbent fibrous web using

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patterned spraying systems such as a ink jet-printing technique or a spray-printing technique as exemplified in the teachings of Anderson et al (col. 1 lines 7-11; col. 12 line 66 to col. 13 line 38; col. 14 lines 15-22 & 38-65).

On page 10 full paragraph 1, Counsel requested for examiner to make an office action non-final, *"because these claims [1-3, 7-9 and 11-14] have not yet been formally rejected."* (terms inserted). Claims 1, 7-9 and 11-14 are substantially a mere repetition of claim 24. The repeated limitations have already been addressed on page 2 to page 4 line 8. The limitations (i.e. *"particles which stick to surfaces of fibers at a distance from each other, thereby forming the absorbent core material"*) in these claims, which are not recited in claim 24, are fully addressed on page 4. The limitations of particles being distance from each other are precisely the reason why Examiner intentionally rejected claims 1,7-9 and 11-14 on page 4 and rejected claim 24 first on page 2. Examiner, however, agrees with Counsel that, these claims were inadvertently left out in a heading in numbered paragraph 3. However, Counsel should/would have reasonably recognized and understood that, these claims are intended to be rejected for reasons set forth above. It should further be noted that, it is clearly indicated in form PTOL-326 line number 6 that, *"Claim(s) 1-27 is/are rejected."* If there was any confusion whether these claims were intended to be formally rejected, Counsel should have called the Examiner to clarify the office action. Examiner would have gladly added an extra month (reset the time) for counsel to response. In any event, to please Counsel, this office action is made non-final.

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As for Counsel's arguments on page 12 last paragraph regarding the use of polyester fibers in the examples of Itoh et al, as correctly noted by Counsel, Itoh et al also teaches using an absorbent fibrous material (col. 5 lines 53-67).

Counsel is herein apprised that a reference is not confined to the disclosed working examples. A proper evaluation of the reference must includes a determination of what the reference reasonably conveyed to one having ordinary skill in the art. It is respectfully submitted that, the teachings of Itoh et al would have reasonably suggested to one in the art not only to use polyester fibers, but also a wide range of fibrous materials such as wood pulp (col. 5 lines 64-67).

As for Counsel's arguments on page 13 full paragraph 1 regarding the amount of monomer applied to a nonwoven fabric in examples 1-17 of Itoh et al, once again the teachings of Itoh et al is not limited to examples disclosed in the reference. A proper evaluation of a reference is, what the reference taken as a whole would have suggested to one in the art. Counsel's attention is directed to column 7 lines 59-66 of the Itoh et al patent, where it discloses preferably applying around 10-1000 parts by weight of monomer for every 100 parts by weight of a fibrous web.

As noted above, in light of the similarity of the production processes (i.e. using a jet ink printing technique to apply superabsorbent polymer precursor compositions), the recited characteristics are taken to naturally flow from a process taught by Itoh et al, where a ink jet printing technique is used to add 1st and 2nd superabsorbent polymer precursor compositions. In any event, such would have been obvious in the art, since it is conventional in the art to apply

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superabsorbent particles to a fiber web such that, the particles stick to fibers in the web and are substantially spaced apart from one another and since one in the art would have determined, by routine experimentation, an optimal SAP concentration being applied to a fiber web for a desired end-use of a resultant absorbent article. Average distance between SAP clearly depends on an amount of SAP which is applied to a fiber web for a given surface area of the fiber web.

As for Counsel's argument on 15 regarding the Anderson et al patent, Examiner agrees with Counsel that Anderson et al does not teach using a jet-ink printing device for applying SAP precursor composition to a fibrous substrate. However, it is respectfully submitted that, the Anderson patent as a whole would have suggested to one in the art to use a jet-ink printing device to apply a SAP precursor composition in a preselected pattern to a fibrous substrate. The teachings of the Anderson patent would have suggested to one in the art that a jet ink printing device can effectively be used to apply various liquid compositions (i.e. **not limited to applying ink**) to a substrate at a desired preselected pattern.

As for Counsel's argument on page 16 regarding claim 10, by a simple application of common sense, Counsel would/should have understood that this claim is intended to be rejected. The limitation in this claim is identical to a limitation recited in claim 15. Claim 15 was rejected in a prior office action. Note once again, it is clearly indicated in form PTOL-326 line number 6 that, "*Claim(s) 1-27 is/are rejected.*". In any event, such is moot because a request to make this office action non-final is granted.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

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07-09-04